

**Space Physics Interactive Data Resource
SPIDR**

Installation guide

Version 1.1

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Preparing to install

Before installing SPIDR web-application please check that all the software listed below has been installed and properly configured:

- MySQL Database Server 4.1
- Apache HTTP Server
- Apache Tomcat JSP/Servlet Container
- Apache Axis

All exported SPIDR data should be accessible for web-browsers and web-services via *dataexport* Apache context. That means, Apache must be configured to allow downloads from the following URL: <http://your.server.name/dataexport>. Tomcat server must be able to write into the local directory, corresponding to this URL.

Creating a Tomcat context

To create a Tomcat context for SPIDR you have to download *spidr.war* from <http://clust1.wdcb.ru/support/spidr/spidr.war>, place it into Tomcat *webapps* directory and restart Tomcat. Depending on Tomcat settings the contents of *spidr.war* will be unpacked to a separate folder, or a new context named *spidr* will be created immediately.

Then you should open Tomcat's *web.xml* file, usually located in *%TOMCAT%\webapps\spidr\WEB-INF*, and find the following strings:

```
<servlet>
  <servlet-name>SettingsServlet</servlet-name>
  <servlet-class>wdc.settings.SettingsServlet</servlet-class>
  <init-param>
    <param-name>configFile</param-name>
    <param-value>
      C:\Apache\Tomcat\webapps\spidr\conf\init.conf
    </param-value>
  </init-param>
  <load-on-startup>1</load-on-startup>
</servlet>
```

This XML fragment loads *SettingsServlet*, used to load SPIDR configuration files. You must change *<param_value>* for *configFile* to point to your SPIDR configuration directory.

SPIDR configuration files are described in the next section of this guide.

SPIDR configuration files

init.conf

This is the main configuration file, which contains links to all other configuration files.

```
#  
# Main configuration file  
  
#  
  
directory.conf=C:\Apache\Tomcat\webapps\spidr\conf\  
  
# information from conf file 'users.conf'  
# using the prefix 'users'  
include.users.sourceType=wdc.settings.FileSettings  
include.users.param=%conf%/users.conf  
  
include.viewGroups.sourceType=wdc.settings.FileSettings  
include.viewGroups.param=%conf%/viewGroups.conf  
  
# information from conf file 'locations.conf'  
# using the prefix 'locations'  
include.locations.sourceType=wdc.settings.FileSettings  
include.locations.param=%conf%/locations.conf  
  
...  

```

- *directory.conf* – the path to SPIDR configuration files.

locations.conf

This files contains linkd to SPIDR shared resources.

```
#  
# Resource locations configuration  
  
#  
  
#  
# Absolute paths  
#  
metadataPath: C:/Apache/Tomcat/webapps/spidr/conf/metadata/  
  
localExportDir: C:/Apache/Apache/htdocs/dataexport/  
httpExportDir: http://193.232.117.165/dataexport/  
  
httpMapserv=http://zenon.wdcb.ru/spidr/proxy/dimetra.wdcb.ru/cgi-  
bin/mapserv.exe?map=C:/Program Files/Apache Group/Apache/htdocs/mapservFiles/
```

- *metadataPath* – the path to XML metadata in FGDC format;
- *localExportDir* – the local directory for exported data;
- *httpExportDir* – the URL, used to refence exported data;
- *httpMapserv* – GIS server, used by SPIDR user interface components.

metadata.conf

This file stores metadata database settings and update periods.

```
#  
# SPIDR metadata access configuration  
# See location.conf for local metadata paths  
#  
  
#  
# Database access  
#  
dbUrl: jdbc:mysql://localhost/metadata?autoReconnect=true  
dbLogin: root  
dbPassword: dmedv  
dbDriver: org.gjt.mm.mysql.Driver  
  
# list of tables to periodically update Low-level inventory (use ';' as  
separator)  
# high-lever update will started after processing the list  
updateList: DMSP_SSJ4  
  
# time interval configuration  
  
# regular metadata update period (in minutes)  
updateInterval: 100  
  
# max time to plot/print data (in seconds)  
maxPlotTime = 30  
  
# max time to get data (in seconds)  
maxGetTime = 30
```

- *dbUrl* – JDBC URL for metadata database;
- *dbLogin* – database user name;
- *dbPassword* – database login;
- *dbDriver* – JDBC driver for the database;
- *updateList* – the list of tables, scheduled for regular metadata update (stations, elements, time intervals, ...);
- *updateInterval* – inventory update interval (in minutes);
- *maxPlotTime* – maximum plot time (in seconds);
- *maxGetTime* – maximum download time (in seconds).

sites.conf

This file stores settings for available SPIDR sites.

```
# SPIDR sites  
# URLs must point out to the SPIDR-web directory  
  
siteList = Boulder, Moscow, Africa, Sydney, Japan, Beijing  
  
localSite: Moscow  
  
Moscow.description: Moscow, Russia  
Moscow.url: http://zenon.wdcb.ru/spidr/  
Moscow.metadata: http://clust1.wdcb.ru/axis/services/SpidrService
```

```

Kamchatka.description: Kamchatka, Russia
Kamchatka.url: http://spidr.kamchatka.ru/
Kamchatka.metadata: http://spidr.kamchatka.ru/axis/services/SpidrService

Boulder.description: Boulder, USA
Boulder.url: http://spidrd.ngdc.noaa.gov/spidr/
Boulder.metadata: http://spidrd.ngdc.noaa.gov/axis/services/SpidrService

Africa.description: Grahamstown, South Africa
Africa.url: http://spidr.ru.ac.za/spidr/

Sydney.description: Sydney, Australia
Sydney.url: http://spidr2.ips.gov.au/spidr/

Japan.description: Nagoya, Japan
Japan.url: http://gedas22.stelab.nagoya-u.ac.jp/spidr/

Beijing.description: Beijing, China
Beijing.url: http://spidr.sepc.ac.cn/spidr

```

- *siteList* – sites names list
- *localSite* – local site name
- **.description* – site description
- **.url* – site URL
- **.metadata* – metadata web-service URL

viewGroups.conf

This file stores information about SPIDR view groups. By view group we mean one or more thematically grouped data sources. Each view group consists of one or more SPIDR tables. A SPIDR table represents a single data source.

```

#
# List of view groups and corresponding group information
#
groupOrder: nightLight, SXI, GOES, IMF, IMFMin, geomInd, SSN, Iono, Intermag,
Geom, Geom_hr, Geom_yr, Hpinoaa, Hpidmsp, CRI, CRI4096, CRIGen, sunImages,
DMSP, DMSP_SSJ4, POES, Amie

GOES.descr: GOES - Space Environment Monitor
GOES.tables: GOES
GOES.category: satellites
GOES.queryForm: query.do?group=GOES&
GOES.helpPage: /help/GOES.html
GOES.samplingDescr: 1, 5 min
GOES.dateInterval: [AUTO]
GOES.coverage: [AUTO] satellites
GOES.dataServer: Moscow
GOES.xml: GOES.xml
GOES.ftp: http://zenon.wdcb.ru/GOES/goes.ngdc.noaa.gov/data

IMF.descr: IMF OMNI - Interplanetary Magnetic Field by Hour
IMF.tables: IMF
IMF.category: satellites
IMF.queryForm: query.do?group=IMF&
IMF.helpPage: /help/IMF.html
IMF.samplingDescr: 1 hr

```

```

IMF.dateInterval: [AUTO]
IMF.coverage: global
IMF.xml: IMF.xml
IMF.dataServer: Moscow
...

```

- *groupOrder* – a list of available view groups;
- **.descr* – a short description of the view group;
- **.tables* – a list of tables, belonging to the view group;
- **.category* – a category, which will be used to show the view group on the SPIDR web-page;
- **.queryForm* – data query form (a relative URL);
- **.helpPage* – help page, corresponding to the view group (relative URL);
- **.samplingDescr* – data sampling (several values are allowed);
- **.dateInterval* – data time interval;
- **.coverage* – data coverage;
- **.dataServer* – ...;
- **.xml* – an XML description of the viewgroup;
- **.ftp* – an FTP-resource, related to the viewgroup.

users.conf

This file stores settings for SPIDR users database (a separate database for each site).

```

#
# Users access configuration
#
#
# Database access
#
dbUrl: jdbc:mysql://localhost/stp?autoReconnect=true
dbLogin: root
dbPassword: dmedv
dbDriver: org.gjt.mm.mysql.Driver

```

- *dbUrl* – JDBC URL of the users database;
- *dbLogin* – database user name;
- *dbPassword* – database password;
- *dbDriver* – JDBC driver for the database.

SPIDR table configuration files

<table_name>.conf

SPIDR can access databases either via JDBC, or via web-services. You should use JDBC, whenever possible, because it's the fastest way. Web-services should be used when security settings on the database server do not allow direct connection to the database, or if you need to use a non-SQL data source.

Example below shows the configuration file for CRI table:

cri.conf

```
#  
# CRI access configuration  
#  
  
#  
# Database access  
#  
dbUrl: jdbc:mysql://localhost/stp?autoReconnect=true  
dbLogin: root  
dbPassword: dmedv  
dbDriver: org.gjt.mm.mysql.Driver  
  
# Data web service  
useWebService = no  
dataServiceUrl = http://clust1.wdcb.ru/axis/services/SpidrService  
dataServiceUser = user1  
dataServicePassword = pass1  
  
# Data access class  
classGetter: spidr.dbaccess.CRIDBAccess  
  
# Metadata update class  
classMetadataUpdate: spidr.dbload.CRIMetadata  
  
# Data loading configuration  
dataTypeList: criPreliminary, cri5min  
  
criPreliminary.descr: CRI preliminary  
criPreliminary.mainLoadClass: spidr.dbload.CRIDBLoad  
criPreliminary.readDataMethod: readData  
criPreliminary.loadDataMethod: loadData  
  
cri5min.descr: CRI 5-min (parameters: {station code})  
cri5min.mainLoadClass: spidr.dbload.CRIDBLoad  
cri5min.readDataMethod: read5minData  
cri5min.loadDataMethod: loadData
```

- *dbUrl* – JDBC URL of the database;
- *dbLogin* – database user name;
- *dbPassword* – database password;
- *dbDriver* – JDBC-driver for the database.
- *useWebService* – web-service flag; SPIDR will connect via web-service if it is set to “yes”;
- *dataServiceUrl* – web-service URL;
- *dataServiceUser* – web-service user name;
- *dataServicePassword* – web-service password;
- *classGetter* – SPIDR API class, used to retrieve data from the database (JDBC);
- *classMetadataUpdate* – SPIDR API class, used for metadata update;
- *dataTypeList* – file formats, available for upload;
- **.descr* – format description;
- **.mainLoadClass* – SPIDR API class, used to load data into the database;
- **.readDataMethod* – class method for parsing data;
- **.loadDataMethod* – class method for loading data.

Installing SPIDR web-services

This section describes the process of installing SPIDR web-services on Apache Axis.

1. *web.xml modification*

Add the following lines to *web.xml* file, located in `%TOMCAT%\webapps\axis\WEB-INF\` directory:

```
<servlet>
    <servlet-name>SettingsServlet</servlet-name>
    <servlet-class>wdc.settings.SettingsServlet</servlet-class>
    <init-param>
        <param-name>configFile</param-name>
        <param-value>
            C:\Apache\Tomcat\webapps\spidr\conf\init.conf
        </param-value>
    </init-param>
    <load-on-startup>1</load-on-startup>
</servlet>
```

This XML fragment loads *SettingsServlet*, used for loading SPIDR configuration, thus making it available to Axis web-services. *configFile* value defines the path to *init.conf* file.

2. *Copying the necessary libraries*

Copy all JAR-files from `%TOMCAT%\webapps\spidr\WEB-INF\lib` to `%TOMCAT%\webapps\axis\WEB-INF\lib\` directory

3. *Web-services registration*

To register SPIDR web-services you need to execute the following command from *WebServices* directory of SPIDR distributive package:

```
java org.apache.axis.client.AdminClient deploy.wsdd
```

The following web-services should become available:

- FileService
- SpidrService

For further information on SPIDR web-services please refer to “SPIDR web-services guide”.

Testing the installation

When you’ve completed all the tasks described above, SPIDR welcome page should be available at <http://your.server.name:8080/spidr> (assuming Tomcat server is set to listen to port 8080). On the welcome page you can register as a new user or use the default “guest” account. For help on using SPIDR web-interface please refer to “SPIDR user’s guide”.